

# Conceptual Principles of the Planning of Modern Public Libraries

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## INTRODUCTION

Over the last decades scientific progress has inspired not only major technological but most of the social and cultural changes as well. The information society of new quality has been developed. It could be characterised by the rapid growth of the amount and variety of information, development of the conception of information as a commodity, formation of knowledge and information industry, development of the information and communication technology, the impact of information and its technologies on all spheres of life including the nature of learning and work as well as on the style of everyday life.

Today the character of activities and architectural solutions of traditional libraries do not answer the needs of modern information society and particularly its needs on information provision. There is a great lack of modern libraries in Lithuania, the state that fourteen years ago has restored its independence. After some years of deep business depression and crisis following the change from a totalitarian regime into a market economy there can be mentioned some positive moves. The last years of significant rise of state economy has allowed development of the policy of Library Renaissance in Lithuania.

In 2002 the Lithuanian Ministry of Culture has approved the "Library renovation and modernization plan for 2003-2013", which includes the building of 4 new and wide-ranging reconstruction of 5 public library buildings, as well as smaller reconstruction and renovation of several public libraries in the state. Lithuanian librarians and architects have started to discuss what the modern library building should be. Therefore has been organized at the **Kaunas University of Technology** (KTU) a group of architects and librarians led by **Vilnius Gediminas Technical University** (VGTU) professor of architecture, K.Jakovlevas-Mateckis. The co-authors of this article: architect and librarian Mrs.Lina Kostinaitė, and library director of the **Klaipėda University** (KU), Mrs.Janina Pupelienė can be mentioned as the most active members of this group.

The group analysed the development of Lithuanian libraries and did sociological research on main factors influencing library architecture solutions to develop conceptual principles of modern library buildings. On the basis of the developed conceptual principles a pilot project of a modern regional public library has been made. For wider discussions on these developments the conference at the Kaunas Technology University has been organized on February of 2003 (**Šiuolaikinės, 2003**). For the first time in Lithuania leading architects and librarians met and discussed together. The participation of Ms. Ewa Kobierska-Maciuscko, director of the Warszawa University Library, member of the Expert Committee of the LIBER Architecture Group, was very important for this conference. She presented the LIBER organization and its activity on library architecture to Lithuanian architects and librarians, evaluated Ms. Kostinaite's pilot project and research developments of the above-mentioned group.

The main purpose of this article is to analyse some aspects of modern public library performance and its architecture, to highlight the main factors influencing its architecture and to present some conceptual suggestions for the planning of these types of libraries.

## SOCIOLOGICAL RESEARCH

With the purpose of objective evaluation of the correspondence of current architectural solutions of Lithuanian libraries to the main needs of its users and staff, to identify what kind of library is needed for the current user, the sociological research has been made by the Department of Architecture at the Kaunas University of Technology (**Kostinaitė & Jakovlevas-Mateckis, 2002**). Three regional libraries - **Lithuanian National Library** (LNB), **Kaunas County Public Library** (KVB) and **Klaipėda County Public Library** (KLAVB) - have been chosen as the basis for the research. These libraries are situated in a newly developed or developing building. For a long time the first two libraries have been the only libraries in Lithuania with the buildings specially built for library purposes.

There have been presented four blocks of questions to the respondents. These blocks are:

- The evaluation of the library's surrounding.

- The evaluation of the library's interior.
- The evaluation of the library's technologies and functions.
- What the modern library has to be.

From these blocks 28 questions have been addressed to the users and 38 to library staff. The analysis has been made from the total of 2500 answered questionnaires. The biggest part (2400) of the answers was given by the library users and only 100 by the staff of these three evaluated libraries.

In general, all the answers are rather pessimistic. Only 18% of users are satisfied with the library's out-door surroundings. 75% of respondents have mentioned the lack of parking places near the libraries. Libraries' interior satisfies only 37% of users and 39% of staff. Only 34% of library staff evaluated their working places as comfortable and well designed. In all evaluated libraries the lack of modern library equipment and technology was stressed. 59% of respondents evaluated the library building as not corresponding to needs of modern library technology. The lack of places to relax has been mentioned in 59% of respondents' answers. Together with an evaluation of the existing buildings, all respondents expressed their wishes concerning a new public library. Summarizing their answers, a new type of library should be fully equipped with modern information technology, while the library building should be designed to the cultural and social activity of the library users: for language, computer, and business courses; amateur art and social communication of the library users.

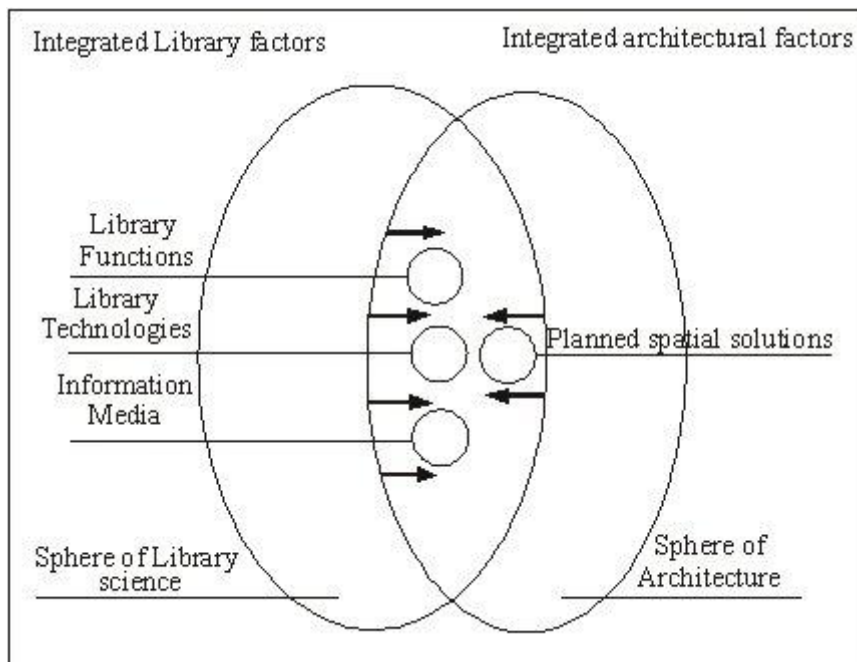
We can state that today's library is experiencing a period of changes. In order to survive in such constantly changing environment, every library has to change itself according to the needs of modern information society. That's why the library's environment has to be developed systematically, following the principles of urban planning, architecture, engineering, design and library sciences (**Jakovlevas-Mateckis, 2000**). Nowadays we understand the importance of the development of an attractive public library by all means: architectural, functional, services provided etc. It has to correspond not only to informational, communicational but also to cultural, leisure, aesthetical and other community needs, to provide not only traditional library services but to organise non-traditional - cultural and social - activity. That's why we have to develop today a new multifunctional type of library according to a flexible model where one third of the library space should be assigned for the additional social and cultural activity.

## **MAIN FACTORS INFLUENCING ARCHITECTURAL SOLUTIONS OF LIBRARY PLANNING**

The process of planning library buildings revolves around the intersection of architecture and library sciences, each of them with its theoretical and philosophical level. Library architecture combines some factors of these spheres which interaction gives these buildings certain singularity, very typical for this kind of buildings. That's why we can name these factors as integrated. Integrated library factors - library technology, library functions and information media (**Kostinaitė, 2001**) - determine usually the planned spatial solutions of the library, which are in particular the integrated architectural factors. Otherwise, architectural solutions determine the quality of accomplishment of library functions, the rationality of the technological scheme, the character of deployment of information media etc.

So we can state, that interaction of these two types of integrated factors is mutual. This integrated sphere cannot be attached to library science, because the planned spatial solutions of buildings belong to the sphere of competence of architecture. Otherwise, analysis of directly influential factors (library technology, library functions, library media) and their features is the competence of library science. This could be a periphery sphere of two sciences and all points of interactions in this sphere we can name as integrated factors (Figure 1)

Fig.1. Interaction of integrated factors of library science and architecture



## ***Integrated library factors***

Integrated factors of today's libraries are: library functions, library technologies and information media.

### **1. Library functions**

Nowadays libraries perform some main and accessory functions. The main library functions or directions of performance are: user service, media processing, preservation, and organisational-service functions. These main functions are typical for all kinds of libraries. According to these functions library space is divided into three parts: space for user services, space for library media, and space for the library staff. For a long time most of the library services have been oriented on the average user which is not existing in reality. Now libraries are more and more treating users as individuals with very personal needs, approaches and psychological characteristics. Libraries have constantly analysed their services for the purpose to assure that there are enough users who need such services. Only orienting to its users needs, implementing the most innovative forms of media preservation and provision, processes of modern library technology, analysing all these phenomena, determining certain procedures and foreseeing main directions of its performance, libraries can become modern and attractive institutions that can meet informational, cultural, communicational and other needs of the society.

### **2. Library technologies**

Library technologies are one of the most important factors in planning the structure of space for user services, media preservation and staff, and connections and links between these spaces. This factor determines the usage of computer, audiovisual and other modern technologies in the library.

Three major technological processes can be distinguished in the library performance. Sometimes these processes are called "library cycles" or "ways". These are: "way of the media", "way of the orders", and "way of the information". The "way of the media" is the most important library circle and includes processing and location of the media. The "way of the orders" includes identification of the media in the information system and in the stacks, delivering media to the users and returning it back to the stacks. The "way of the information" includes the producing of the "secondary" or processed information. All cycles are divided into smaller structural parts - work processes and smaller operations.

In analysing library technologies it is very important to understand and examine flows of technology and materials. These two flows impact differently on the planned-spatial structure of the library. Flows of information media, users and orders are material and can be characterised by length, speed, direction, continuity and discretion. Technological flow is a gradual change of different tools, states and qualities of library work, realised in library circles and processes. The importance of dividing technological and material flows is emphasised analysing the planned-spatial structure of the building. These differences can be solved in two

ways: in the first case one can minimise the length of the flows and number of the medium service points with the help of architectural solutions. In this case the flow of media and users is material, but work what is done at the medium service points (carrying and sorting media etc.) is technological. In the other case the way of the user could be shortened using modern library technologies.

The continuing process of development of library technology, based on modern information and communication technology, has allowed planning of library buildings by taking account of future technologies. Otherwise, beside the purpose is to plan such buildings where constructional imperfection can be compensated by sophisticated technology. For example: the storages have to be planned in such way that optimal climate regime can be maintained either by special conditioning system or without it, ventilation can be either artificial or natural. Planning of the building and technological solutions have to be rationally coordinated. Talking about the impact of modern information technology on library buildings planning first of all one has to take account of the usage of computers in library's work.

### **3. The form of information media**

The form of information media is a very important library factor and has direct impact on the structure of storage-spaces. It varies very rapidly now. The technological progress has a crucial impact on this variation. Despite of this, the biggest part of Lithuanian libraries' collection consists of traditional forms of media - books, magazines and newspapers (**Kostinaitė, 2003**). Modern forms of information media such as microfiches, compact discs etc. are comparatively rare, because of the lack of special equipment for its usage in the mentioned Lithuanian libraries. At the Lithuania National Library only about 0,1% of modern information media form part of all preserved media, including discs, cassettes, tapes, microfilms, microfiches and compact discs. This percentage is even much smaller in the other two analysed libraries. However, according the acquisition reports of these libraries, this percentage is growing every year.

Planning the library storage-spaces, it is important to forecast the changes of the forms of information media and the speed of growth of their amount in the future. The size of the library collection has impact not only on storage-spaces and their qualities, but has impact on all sizes of library spaces as well. Having a rich collection, a library can expect more users and needs more space for reading places. Other integrated factors such as organization and coordination of library performance have not very much impact on architectural solutions or this impact has an indirect character.

### ***Integrated architectural factors***

Every typical group of buildings is identified according to the adequate features and characters of architectural solutions. Analysing integrated architectural factors it is important to discuss general characters and future developments of planned-spatial solutions of libraries as a certain kind of buildings.

#### **1. Planned-spatial solutions**

Today the planned structure of libraries is not very sophisticated. Very often they have rectangular (close to quadrate) forms. Planned structure of libraries is characterised by three generalised structural elements: area for user service, storage-space for information media, and area for the staff. There can exist one sided or mutual connections between these areas and it is most advisable to analyse them together with all their elements. Every structural element according to library practice worldwide can have many solutions (**Library, 1997**). Analysing the planned-spatial solutions of the world's and Lithuanian libraries many are massive in size close to the form of rectangular prism and distinguishing themselves by their monumentality. Very often it is one single bulk, sometimes with an internal yard.

Reconstruction or addition of rotund forms of buildings is very complicated, so there are not so many rotund libraries (planned) and in most cases such libraries are comparatively small. For example: Mito Vest City library (**Mito, 1993**) or V<sup>TM</sup>rmd\ municipal library (**V<sup>TM</sup>rmd\, 1990**). The rotund form of the Mito Vest City library (floor space 2570 m<sup>2</sup>) does not perform archival functions. This library has no closed storage-spaces. The whole library collection is in open stacks. The library performs mainly informational, cultural and aesthetical functions, while educational or research needs are insufficiently satisfied. It has a constantly changing collection of new periodicals and publications for leisure and relaxation (**Mito, 1993**).

In most cases library buildings have two to four floors. Sometimes libraries have just one floor or, on the contrary, many floors (Bibliothèque de France). According to research, this is determined by architectural townscape environment. Most library facades are smooth, clear and strict, with much glass. Some library walls are completely of glass. The walls of the Setaka Public library (**Public, 1997**) are transparent even from three sides. It depends on the requirement to illuminate spaces for the users. Moreover, it helps to create the image of a modern library - an open and democratic institution, serving the society.

Summarizing, we can say that most bulks of modern library buildings are massive, monumental; in most cases their forms are simple rectangular prisms, with smooth, clear and strict facades, and much glass. It can be seen as a semantic code of the library. Variations are possible only in the frames marked by this code. The

concrete natural, urban, and architectural environment influences these frames.

## **LIBRARY STRUCTURE AND CHARACTER OF ITS PREMISES**

Premises for user services - reading places, lending and other information media delivery points - occupy 15% to 45% of the total library space. Modern premises for user services can be characterised by one large open space with reading places, lending and other information media delivery points - these points are only different areas of this total space. Internal walls are reduced to a minimum. Very often they are designed from transparent materials. In the library practice worldwide it is difficult to find very strictly separated spaces for information media storage and users. Part of the collection, which is intensively used, is located in the area of user premises. In most of the libraries worldwide the biggest part of their total collection is located in open stacks. The staff service points in open stacks or in lending points are computerized. They have direct connections with the entry area, reference services and catalogues.

Closed or semi-closed working places are rather popular in libraries. According to the above mentioned survey results, 70% of users would like to work in more isolated areas. Wide usage of computer technology does not change much of the planning of user space, with exception on the size of readers' tables, which are planned much larger than in traditional libraries. Some changes in planning user spaces can be mentioned in the catalogue area. Increasing usage of electronic catalogues allowed planners to reduce the catalogue area.

Special premises for audiovisual equipment (for use of video films, compact disks, magnetic tapes, records etc.) are often planned in the users' area. There is increasing need for multiplying, copying, scanning and printing equipment in the libraries. This equipment makes library work more effective but needs special space. This equipment has to be easily reached by the users. All analysed Lithuanian libraries lack such equipment. Most of their equipment is out-of-date and such services are expensive.

Some decades ago information media storage-spaces have been designed for preservation of books and other media published in paper form. Nowadays, because of the rapid growth of printed materials acquired by libraries and because of the varying forms of information media the planning of storage-spaces and its equipment has experienced many changes. During the last years more and more expensive, fully automated storage systems are being used in many libraries of developed countries. There also exist not very expensive and simpler storage systems in other libraries as well.

Reviewing professional publications, we can meet the stress on future storage problems. We can predict the continuing growth of various forms of information media, implementation of high information technology in the library that will change the structure and shape of storage-spaces. We expect that the space for storages will be reduced compared with other library spaces. In current libraries spaces for storage occupy 15% to 50% of the total building. Planning future storage-spaces one must predict the possibility to expand these in horizontal and vertical directions depending on the total composition of the building.

Space for staff premises is not specific for library buildings. Nowadays these are usually computerised and automated. This space occupies 7% to 30% of the total library space and in the future this percentage will be reduced, because of the further computerising and automation of library processes. Auxiliary premises (lobbies, lavatories, locker-rooms etc.) are not specific for library buildings. They usually occupy 10% to 20% of the total library space.

## **SOME CONCEPTUAL PRINCIPLES OF PLANNING MODERN LIBRARIES**

The traditional library doesn't meet the changing needs on information provision of today's information society. Library buildings, which are planned on old norms and standards, do not satisfy today's situation. Summarizing the results of above-mentioned research, we can formulate some principles of modern library's activity and its architectural solutions.

### **1. The modern public library has to be multifunctional**

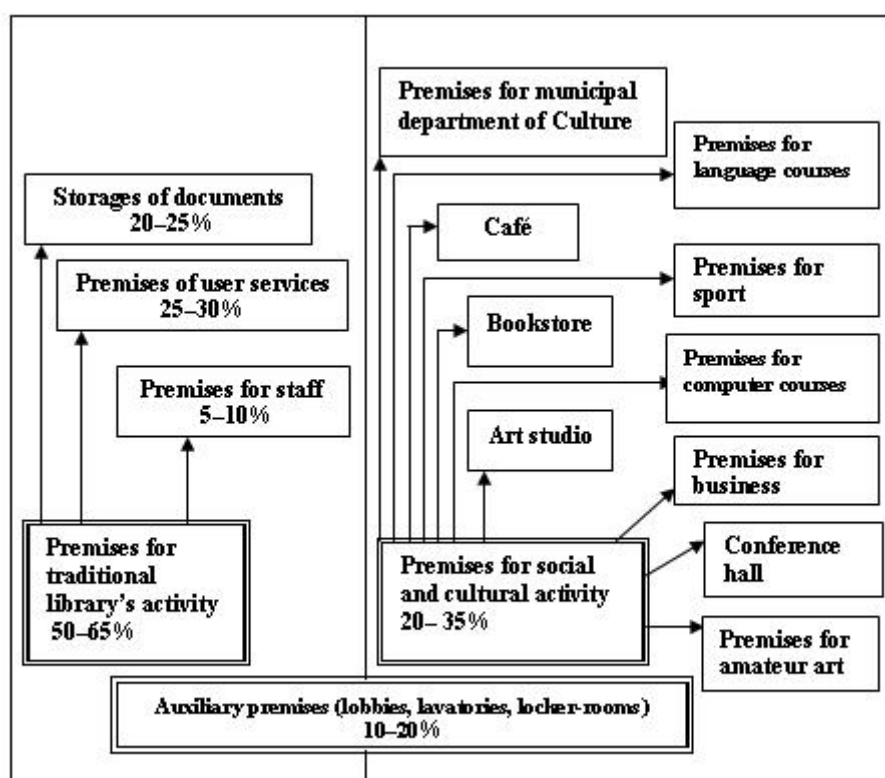
The modern public library has to be multifunctional and to provide not only informational or other typical library services but cultural, communicational and other extra services as well. Such library will comprise two functional parts: 1) provision of library's traditional (informational) services and 2) cultural and social services. These non-traditional services (cultural, educational, commercial, sports, recreational, entertainment etc.) will make the library more attractive and can lead to an increase of the number of users of the traditional library services.

For this new cultural and social functional part adequate premises have to be planned. This will give the library

a new image of social importance. The modern public library will become a social centre of culture, a home for society. It will be a multifunctional and vital centre, organising and joining society. A library with such social and cultural activity will be more attractive for investments. The library will become a library information centre, club, and Internet café etc. Oriented to the various needs of society such a library will satisfy needs of different social groups and ages. It will become a synthesis of various cultural activities. All these different kinds of activity will stimulate other kinds of cultural activities and all kinds of culture in general. So, the public library has to be perceived as an information institution and as an amateur art centre and organizer of recreation and communication as well.

According to the results of the mentioned survey and research on integrated factors, we can state that 20% to 35% of library premises have to be assigned to social and cultural activity, 50% to 65% for library's information services, 20% to 25% for storage-spaces, 5% to 10% for staff premises, and 10% to 20% of space have to be assigned to auxiliary premises (Fig.2).

Fig. 2. Model of multifunctional public library



## 2. The modern public library has to be comfortable

Comfortableness of service is one of the most important indicators of modern library activity's value. This indicator includes: easy access to the library building, rational planning of the building and impressive architecture. There should be created a good working environment in the library: arranged individual carrels for intensive working and studying users, and well illuminated working places with dividing screens separating each place. Comfortableness also includes: providing the library with soft furnishing, plants, aquariums, soft carpet, large windows, balconies, premises for communication of people with different interests, and provisions with sound and video equipment. There is one more important demand for comfortableness. This is the accessibility of the collection. The collection has to be located according to library's collection profile, library's strategy and expectable users. The whole collection, arranged in subject groups, has to be located in different areas of open stacks.

## 3. The modern library has to exist in harmony with its natural and urban environment

The library has to become an organic part of the natural and urban environment.

#### **4. The modern library as an open, democratic and intellectual communication institution**

All architectural solutions of the modern library have to express the image of the library as an open, democratic and intellectual communication institution. This image can be created by planning buildings of "virtual" architecture what can be characterized by "dematerialised" forms of clear, laconic, simple and visible bulks. In the process of making constructional resolutions and choosing the building materials one has to orient on comfortableness of the internal and external environment of the library. There has to be a balanced thermal, illumination and noise regime. The building of a public library has to be not higher than four overground floors. The higher a building, the more expensive will its maintenance be, more staff will be needed and more sophisticated technology and security systems.

#### **5. Planning of the building has to be flexible and simple**

The planning of the building has to be flexible and simple in the general plan. There have to be possibilities of extension or transformation. That's why is advisable to use as much as possible movable columns, equally located ventilation, heating and aeration systems. The construction of light screens should also be easily movable from one to another to create a large space.

#### **6. An internal garden in the middle of a building**

It is advisable to design an internal garden in the middle of a building. This solution together with vertical and horizontal cabling allows an architect to create an optimal and aesthetic interior. Through the internal garden it is possible to achieve an architectural wholeness of the building and the interior.

#### **7. Locate the storages on the underground floors**

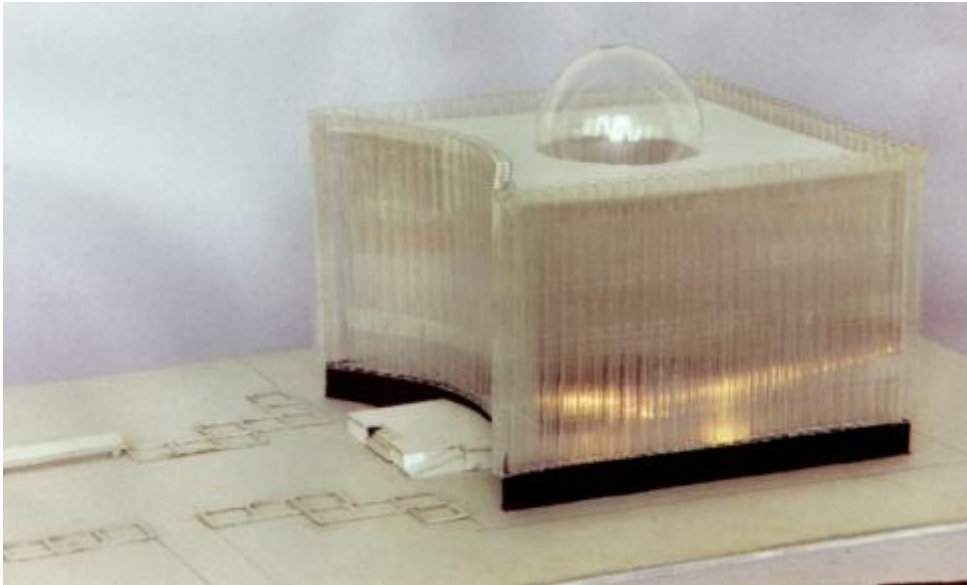
It is advisable to locate the storage-spaces on the underground floors and premises that need daylight on the overground floors. The underground storage-spaces can be characterized by the following advantages: the possibility of rational usage of the collection, to locate it operatively, to organize more credible security of the collection, and make it much easier to maintain a proper temperature and humidity regime. The underground storage-spaces make it possible to design a compact building, and better its constructional, economic and exploitative indicators.

### **APPLICATION OF THE MAIN CONCEPTUAL PRINCIPLES IN A PILOT PROJECT**

For this pilot project (planning of a modern regional public library) has been chosen a plot in the Pilaitė residential area of Vilnius city. This area has a good transport connection with all areas of the city. The library is planned in the very centre, on the compositional axis of this area in front of a church. All libraries' walls will be of glass. The library will look as a glassy heart of this area - open to all world's news, information, and problems, and inviting to visit. The shape of the building is very simple - a bulk of the quadratic projection. One of the building walls is concaved inside. It looks as if standing opposite to the church influences it. This arched line adds variety to the exterior of the building and gives it an expressive character.

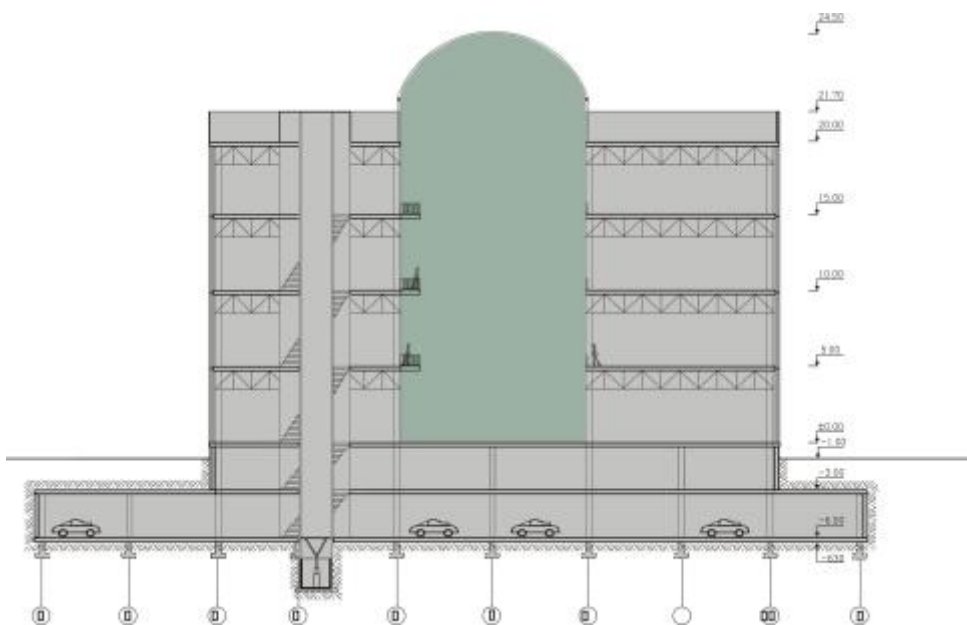
The building is planned in the centre of the plot, and has very convenient pedestrian tracks and roads to parking places. Near the library is planned a square covered with stones, which contrasts with the building's glassy facade. In this square are planned relaxation places and one can see reflected on the glassy library walls a composition from stones and trees. The bulk of the library is monumental but it looks light and open. It is a structure of virtual architecture with actually dematerialised outside walls. It looks as if there is no building: it melts with the background of sky and the surrounding of trees and stones (Fig. 3).

Fig. 3. Model of the Building



On the roof of the building there is a glazy shade over a winter garden as if it crowns the building with its round form. It echoes with the concave wall of the main facade. For the construction of the library use will be made of a columns system (12 x 12 m). This allows the architect to act more flexible during the planning of the library premises. This system of columns will be used for the underground floors (Fig. 4.)

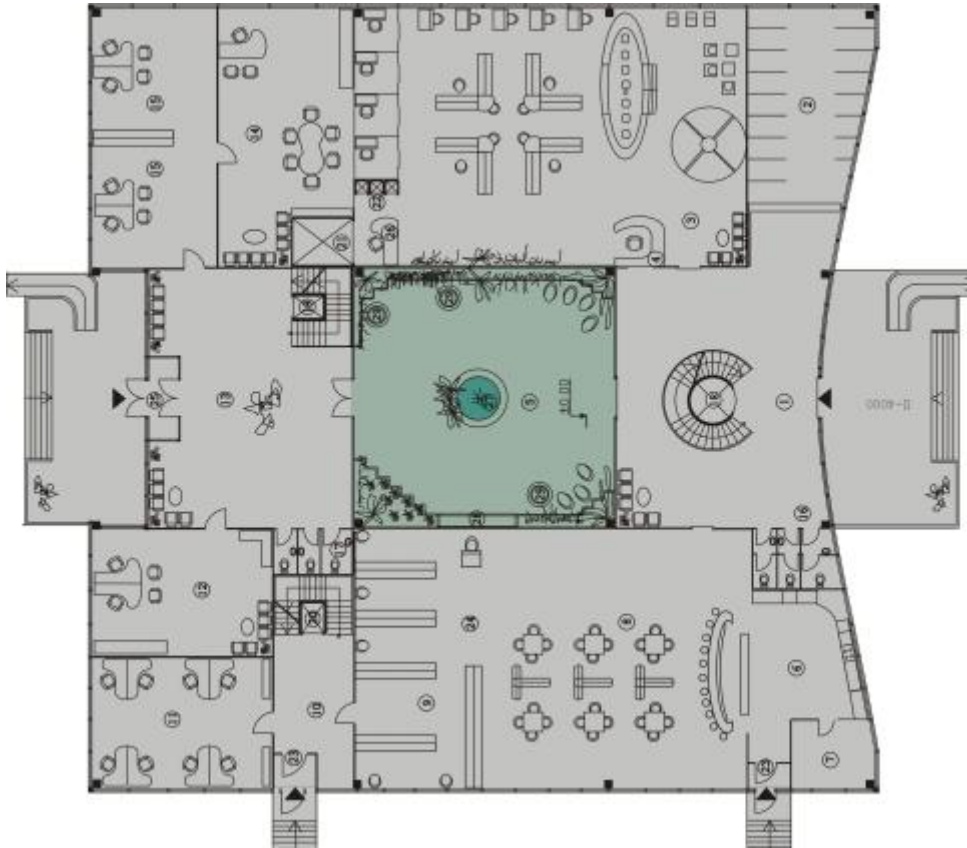
Fig. 4. Cross - section of the building



The interior of the building is planned rationally: there are many possibilities to transform the spaces dividing them with the help of partition walls. Only constructions of staircases and lifts are inserted into the main carcass of the building. There is a winter garden inside the building covered by the glazy shade. Through the garden's glazy roof daylight comes into the building and through various galleries it diffuses to reading places, lobbies and other premises. The garden is the heart of the building. It's like the building's core with a game of water and lights on the "water wall", fountain, playful aquariums and decorative plants.

The total area of each floor is 1200 m<sup>2</sup>, with total library's area of 6000 m<sup>2</sup>, 4 overground floors and 1 underground floor. On the first floors are located a lobby, locker-rooms, a children's reading room, a café-newspaper's reading room, a bookstore, the library acquisition department, the winter garden, and premises for cultural activity (Fig.5).

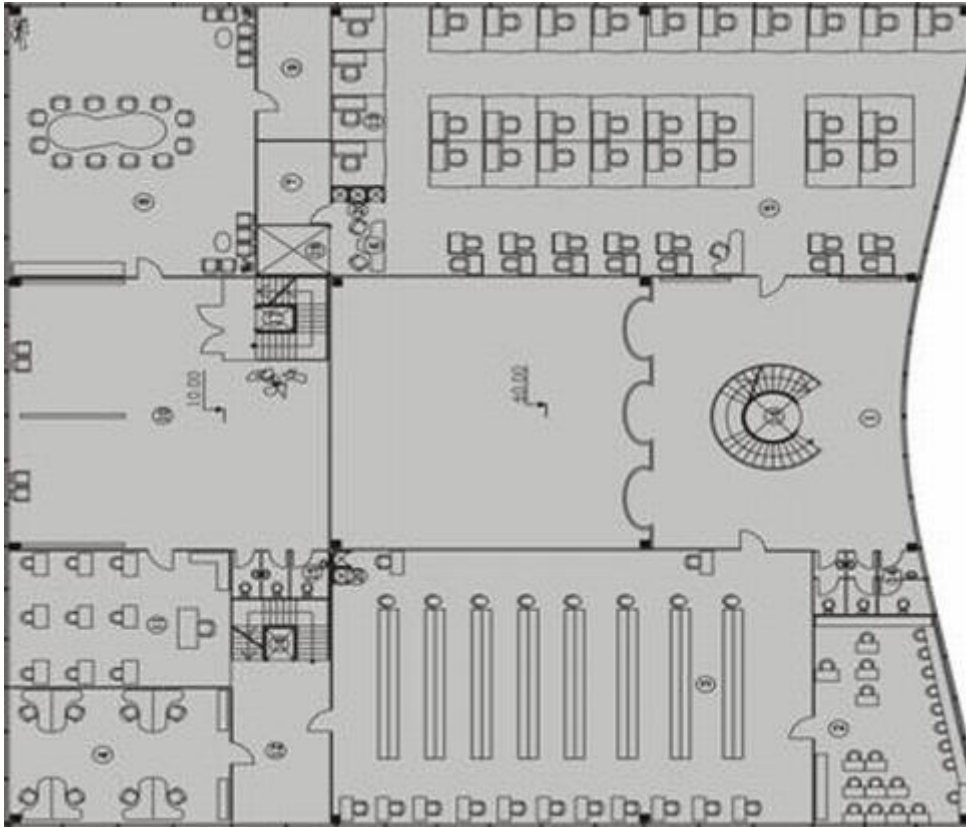
Fig. 5. Plan of the first floor



On the second floor: open stacks with the fiction's collection, a silent reading room of current periodicals, an Internet and information searching room, the acquisition's processing room, the director's office and a meeting room, a gallery, an arts studio, and space for group work.

On the third floor: open stacks with the Humanities collection, a silent reference reading room, an information searching and usage room, an information preparing room, a gallery, premises of discussions' club, and space for group work (Fig. 6).

Fig. 6. Plan of the third floor



On the fourth floor: open stacks with the Technical literature collection, a conference room, the reference department, a gallery, space for amateur art activity, and space for group work. On the underground floor is planned closed fully automated storage, and space for sport activity.

The planned building justifies the results of the above-mentioned research and illustrates the validity of the formulated conception of a modern library. The proposed architectural solution has no pretensions into the final decision; this is only one possible way. In each concrete situation its urban and natural environment influences the architectural solution of a library.

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